

THE

THE >CURSOR

GROUP™

COPYRIGHT 1981
The Cursor Group

THE TINY MICRO COMPUTER NEWS SERVICE

VOLUMN II

\$9.75 SEMI-ANNUALLY

MARCH
1981

ISSUE 6

\$2.00 PER ISSUE

NEW BASIC CARTRIDGE

BY

FRED CORNETT

We at The Cursor Group have received a deluge of letters regarding the rumors people have heard about AstroVisions planned release of a New Basic Cartridge. This column is dedicated to putting these rumors to rest.

AstroVision IS planning to release a combined Bally Basic/Audio Cassette Interface Cartridge in May 1981. The only purpose of this cartridge is to begin packaging the Bally Arcade with Basic and Interface complete, beginning in May. This is being done so Astro-Vision can advertise the Bally Arcade as a complete working Micro-Computer for \$299.95.

We have received several of the NEW Basic Cartridges in Eprom for our review and comments prior to it's release, they are as follows:

1. The NEW Basic Cartridge eliminates the old Audio Cassette Interface which allows you to store your programs on tape. Instead, the NEW Basic has a female mini-plug connector built into the cartridge housing, you merely connect one wire to your cassette recorder and one wire to the cartridge.

2. This Audio Interface operates at 18 00 Baud. This means your programs will load 6 times faster than they do now.

However, there are trade-offs: You will not be able to use "Auto-Run" features or any of the dirty tricks with the line Input Buffer. You are also unable to label programs or data files.

3. The NEW Basic has an Edit feature that allows you to step through a program line you wish to change by pressing two keys for each character. We did not find this very useful and suggested it be improved or dropped.

4. Trace Mode: This feature excited us! The Trace is an extremely valuable debugging tool. Lets say you have completed a new program, but it is getting hung up somewhere and you don't know where. Merely Run the program and when you want to find out what program line the Computer is currently executing-- press the LIST key and that line will print out. Very, very nice!

5. Strings: As things now stand, we have one set of single dimensioned string arrays @ (A), which load directly after your program in the text area. This causes a problem. If we wanted @ (0) = 5611 and after that value was stored in @ (0) we added a line or deleted a line in our program, the value in @ (0) would be changed. This could have been eliminated by starting the strings at the bottom of memory. The NEW Basic does just that and also keeps the old strings, thereby providing two sets of single dimensioned arrays @ (A) and * (A),



these two sets will overlap at a point determined by text size.

6. RS232 Printer and Keyboard Interface is completely eliminated in the NEW Basic Cartridge.

7. Interrupt handling is also changed.

Summary: The purpose of this cartridge is not to provide a Level II Basic, but to sell Bally Arcade Units. Dan Dawson, Pres. of AstroVision, has NO intention in making the old Bally Basic obsolete. There is an existing treasure trove of software supporting Bally Basic and AstroVision wants new people as well as old to be able to access this vast library of software.

This cartridge is not in final form, we will discuss the final product when we receive it.



METRIC CONVERTER

BY



BILL TEMPLETON

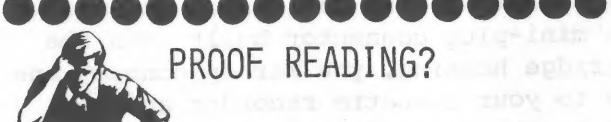
This program converts American measurements to metric. Press GO after inputting your menu selection. It will not be necessary to hit GO after inputting the amounts! Please precede all amounts with zeroes to completely fill the field.

EDITORS NOTE: We made a few changes to this program, however we did not alter what the converter accomplishes. Many thanks to Bill for sending us this one!

F.C.

```
1 .ENGLISH TO METRIC
10 NT=0;BC=248;FC=135;CLEAR ;CY=0;PRINT "ZZZZINITIALIZING...
20 FOR Z=0TO 179;@(Z)=0;NEXT Z;CLEAR ;
FOR Z=30TO 80STEP 10;CX=-59;GOSUB Z
;NEXT Z;GOTO 100
30 PRINT "1=INCHES TO CM";RETURN
40 PRINT "2=YARDS TO METERS";RETURN
50 PRINT "3=MILES TO KM";RETURN
60 PRINT "4=GALLONS TO LITERS";RETURN
70 PRINT "5=OUNCES TO GRAMS";RETURN
80 PRINT "6=POUNDS TO KG";RETURN
100 PRINT ;PRINT ;INPUT "ZZZCHOICE OF A
BOVE?="M;IF (M<7)+(M>0)=2GOSUB 1200
;CX=-59;GOSUB 100+100xM;V=990+10xM;
GOSUB 100+10xM;GOSUB V;GOTO 1100
105 GOTO 100
110 GOSUB 900;RETURN
120 GOSUB 920;RETURN
```

```
130 GOSUB 920;RETURN
140 GOSUB 910;RETURN
150 GOSUB 900;RETURN
160 GOSUB 910;RETURN
200 PRINT "INCHES (XX.X) Z=";@(26)=2;@(
25)=5;@(24)=4;@(23)=0;RETURN
300 PRINT "YARDS (XXXX.X) Z=";@(43)=9;@(
42)=1;@(41)=4;@(40)=4;RETURN
400 PRINT "MILES (XXXX.X) Z=";@(62)=1;@(
61)=6;@(60)=0;@(59)=9;RETURN
500 CX=-59;PRINT "GALLONS (XX.X) Z=";@(
80)=3;@(79)=7;@(78)=8;@(77)=5;RETURN
600 PRINT "ZOUNCES (XX.X) Z=";@(99)=2;@(
98)=8;@(97)=3;@(96)=5;RETURN
700 PRINT "POUNDS (XX.X) Z=";@(115)=4;
@(114)=5;@(113)=3;@(112)=6;RETURN
900 FOR A=9TO 7STEP -1;IF A=7PRINT "."
;GOTO 950
905 GOTO 950
910 FOR A=10TO 7STEP -1;IF A=7PRINT "."
;GOTO 950
915 GOTO 950
920 FOR A=11TO 7STEP -1;IF A=7PRINT "."
",
950 @(A)=KP;TV=@(A);NEXT A;RETURN
1000 $x@($),@(18),@(162);RETURN
1010 $x@($),@(36),@(162);RETURN
1020 $x@($),@(54),@(162);RETURN
1030 $x@($),@(72),@(162);RETURN
1040 $x@($),@(90),@(162);RETURN
1050 $x@($),@(108),@(162);RETURN
1100 CX=-47;CY=0;GOSUB 1100+M;GOTO 1110
1101 PRINT "ZZCMZ=Z";RETURN
1102 PRINT "METERSZ=Z";RETURN
1103 PRINT "ZZKMZ=Z";RETURN
1104 PRINT "LITERSZ=Z";RETURN
1105 PRINT "ZGRAMSZ=Z";RETURN
1106 PRINT "ZKGZ=Z";RETURN
1110 FOR B=174TO 169STEP -1;IF B=169PRI
NT ".",
1120 TV=@(B);NEXT B;CY=-32
1130 CX=-77;PRINT "ZZGO AGAIN?ZZPRESS
GO!
1140 BOX 0,-32,130,10,3
1150 IF &(23)=1GOTO 10
1160 GOTO 1140
1200 CLEAR ;PRINT "ZZZUSE LEADING ZERO
ES";PRINT ;RETURN
```



PROOF READING?

Somehow a semi-colon (;) was printed in our Jan/Feb 81 issue as a colon (:). George Moses told us that little Gremlins exist that travel by the darkness of

night with the exclusive purpose of plaguing self righteous publishers who claim not to print "glitches". We believe him.

Please make the following correction:
page 83 BIORHYTHM COMPATIBILITY ANALYSIS-

20 PRINT "COMPATIBILITY ANALYSIS";CX=-41;PRINT "FOR 2 PEOPLE";PRINT

While we are at it, Alex Morales has found a way to improve the accuracy of this program to within 1 percent. Please make the following changes:

Delete lines 320 & 330. Replace 310, 340 thru 360 with the following:

310 T=32;U=48;V=3
340 @ (19)=ABS(100-((2xG)x4)+((2xG)xT)÷100))
350 @ (20)=ABS(100-((2xH)x3)+((2xH)xU)÷100))
360 @ (21)=ABS(100-((2xJ)x3)+((2xJ)xV)÷100))

DIRTY PROGRAMMING TRICKS

BY

FRED CORNETT



I can't tell you how much enjoyment I have had in the two years I have owned my Bally. Most of my delight has been generated by finding ways of circumventing the limitations of this system.

In the days of the Knights of the Round Table, Knights were trained for combat with a 40 lb. broadsword. They would spend months on end swinging that forty-pounder against a log; when they finally went into battle, they were given a 5 lb. sword. The object being--they had built up so much muscle using the 40 lb. sword, they could swing the five pounder all day without tiring.

and so it is with a Bally programmer.....

When you key-in the programs printed on our pages, you must key them in exactly as you see them. We have used many different tricks to save bytes that I will attempt to explain.

1. PRINT STATEMENTS

The final quote ("") in a print statement is not needed if the print statement is the last (or only) statement on a line.

The following statements are correct:

10 PRINT "HELLO
20 PRINT "GOODBYE";A=25
30 C=26;PRINT "COME HERE";D=6;PRINT "NOW

2. IF STATEMENTS

When we know that the status of a variable is normally zero and we want the computer to print "ZAP" whenever the variable value is below or above zero we would normally do it thusly:

10 IF A>0 PRINT "ZAP

20 IF A<0 PRINT "ZAP

or

10 IF A#≠0 PRINT "ZAP

A much easier way would be:

10 IF APRINT "ZAP

This last statement is saying "If the value of A is anything but zero Print "ZAP". The Bally logic does not accept zero as a value, so lets rephrase what line 10 is doing: If A is any value Print "ZAP".

We can take this notation system (Boolean Algebra) a step further and make up some pretty sharp statements, key in the following without a line number and hit GO:

PRINT 4x6=10 (no quotes please)

Computer will print "0". Key in:

PRINT 4x6=24

Computer will print "1". OK! The first time we did 4x6=10 the computer said "0", which stands for False--the second time, we put in 4x6=24 computer said "1" True. AHA, what we have here is a lie detector. Lets say we wanted the computer to print "ZAP" IF A=6 or IF B=7 or IF C=9 or IF D=2, But we only want the computer to do it once we would normally do it thusly:

10 IF A=6 PRINT "ZAP";GOTO 50

20 IF B=7 PRINT "ZAP";GOTO 50

30 IF C=9 PRINT "ZAP";GOTO 50

40 IF D=2 PRINT "ZAP"

50 STOP

or use the info we have just learned and try this:

10 IF (A=6)+(B=7)+(C=9)+(D=2) PRINT "ZAP"
P
CON'T LAST PAGE

MORSE CODE SIMULATOR

BY

ALEX MORALES
STAFF MEMBER

Alex is 33 years old and joined our staff part-time in Feb. 81. After an honorable discharge from the U.S. Army, Alex worked as a journeyman printer for six years until returning to college under the G.I. Bill. He majored in Computer Science and works full time for Pacific Telephone.

This is a very functional education program that has all the features that our memory size limitations would allow.

When Run, a menu will appear on your screen asking you to select from:

- 1- MORSE TRAINER
- 2- TEXT TO MORSE
- 3- SAVE TEXT ON TAPE
- 4- MORSE ALPHABET

Try pressing 2. Computer will then print "ENTER TEXT (25 CHAR. MAX)". You then key in a phrase such as "I AM A BALLY", use spaces to separate words if phrase less than 25 chars., press GO when phrase is complete. Computer will leave phrase showing at top of screen with morse equivalent underneath, (slash separates letters, 3 slashes separate words, balance of unused character will be slashes).

To use #1 (MORSE TRAINER) you must first use #3 (SAVE TEXT ON TAPE) which will store phrases on tape. This allows a father to store ten phrases (more or less) on tape without his son seeing them. Then, son would use #1 to retrieve phrases from tape without being able to see the actual text.

After using any of the four selections, computer will wait for a key to be pressed before returning you to menu. #4 (MORSE ALPHABET) Merely prints out an alphabet chart with morse equivalent for study purposes.

This program will only accept letters and spaces-no numbers, special characters or punctuation.

NOTE: We gave Alex the idea for this program on a friday morning-he gave us the completed program on saturday afternoon.

```
1 .MORSE CODE
2 .BY ALEX MORALES
5 @ (26)=12;@ (27)=2111;@ (28)=2121;@ (29)
)=211;@ (30)=1
6 @ (31)=1121;@ (32)=221;@ (33)=1111;@ (3
4)=11;@ (35)=1222
7 @ (36)=212;@ (37)=1211;@ (38)=22;@ (39)
=21;@ (40)=222
8 @ (41)=1221;@ (42)=2212;@ (43)=121;@ (4
4)=111;@ (45)=2
9 @ (46)=112;@ (47)=1112;@ (48)=122;@ (49
)=2112;@ (50)=2122;@ (51)=2211
10 CLEAR ;BC=8;FC=7;NT=Ø;W=1ØØ;A=Ø;GOS
UB 8Ø;GOTO 11Ø
15 CLEAR
16 PRINT "INPUT TEXT (25 CHAR. MAX)";P
RINT
17 NT=3
```

CURSOR VOL.II PAGE 94

```
2Ø PRINT "ζ";FOR I=1+ATO 25+A
25 BOX CX,CY,6,8,1;@(I)=KP;TV=@(I)
3Ø IF @(I)=31I=I-1;GOTO 25
31 IF @(I)=13@(I)=32;GOTO 45
4Ø NEXT I
45 RETURN
5Ø IF @(I)=32RETURN
52 C=@(I)-39
54 @(52)=@(C)
55 Q=@(C)÷1ØØØ;IF Q>ØIF Q<3@(C)=@(C)-(1
ØØØxQ);GOSUB W+Q
6Ø Q=@(C)÷1ØØ;IF Q>ØIF Q<3@(C)=@(C)-(1
ØØxQ);GOSUB W+Q
65 Q=@(C)÷1Ø;IF Q>ØIF Q<3@(C)=@(C)-(1Ø
xQ);GOSUB W+Q
7Ø GOSUB W+RM
71 @(C)=@(52)
75 RETURN
8Ø FOR I=1TO 25;@(I)=32;@(I+52)=32;NEX
T I;RETURN
85 CLEAR
86 PRINT "ζζ",
87 FOR I=1TO 25;GOSUB 5Ø
9Ø IF @(I)=32PRINT "/",
92 PRINT "/";IF CX>=44PRINT ;PRINT "ζ
ζ",
95 NEXT I;RETURN
1Ø1 NT=3;MU=69;NT=Ø;PRINT ".";;RETURN
1Ø2 NT=15;MU=69;NT=Ø;PRINT "-";;RETURN
11Ø PRINT "ζζζMORSE CODE SIMULATOR
12Ø CX=-65;CY=24;PRINT "1ζ-ζMORSE TRAIN
ER";PRINT
13Ø PRINT "ζζ2ζ-ζTEXT TO MORSE";PRINT
14Ø PRINT "ζζ3ζ-ζSAVE TEXT ON TAPE";PRI
NT
145 PRINT "ζζ4ζ-ζMORSE ALPHABET";PRINT
15Ø CX=-41;PRINT "INPUT CHOICE→ζ";;K=KP
;IF K>48IF K<53TV=K;GOTO 17Ø
16Ø GOTO 15Ø
17Ø CLEAR ;GOTO 1ØØØx(K-48)
1ØØØ CLEAR ;BC=96
1Ø1Ø PRINT "ζSTART TAPE TO READ TEXT";:IN
PUT
1Ø2Ø K=KP;IF K=35GOTO 1Ø4Ø
1Ø3Ø GOTO 1Ø2Ø
1Ø4Ø FOR I=1TO 25;@(I)=KP;NEXT I;NT=3;:RE
TURN
1Ø5Ø PRINT "ζζSTOP TAPE NOW";FOR I=1TO 5Ø
Ø;NEXT I
1Ø6Ø GOSUB 85
1Ø7Ø CY=Ø;CX=-77;A=52;GOSUB 16
1Ø8Ø FOR I=53TO 77;IF @(I)=@(I-52)NEXT I;
GOTO 112Ø
1Ø9Ø PRINT ;PRINT "ζWRONGζ-ζCORRECT TEXTζ
IS:
11ØØ FOR I=1TO 25;TV=@(I);NEXT I;GOTO 113
Ø
```

```

1120 PRINT "CORRECT!",  

1130 K=KP; GOTO 10  

2000 GOSUB 15  

2010 PRINT ; GOSUB 86; GOTO 1130  

3000 BC=141; FC=0; GOSUB 15  

3010 PRINT "START RECORDER & PRESS GO", ; K  

=KP  

3020 NT=7; CLEAR ; : PRINT ; TV=35; FOR I=1 TO  

25; TV=@(I); : NEXT I; : RETURN  

3030 PRINT "STOP RECORDER NOW  

3040 GOTO 1130  

4000 FOR A=26 TO 50 STEP 3; CX=-71; TV=A+39; T  

V=61; C=A; GOSUB 54; CX=-23; TV=A+40; TV=61;  

C=A+1  

4010 GOSUB 54; IF A+2<52 CX=31; TV=A+41; TV=6  

1; C=A+2; GOSUB 54; PRINT ; NEXT A  

4020 GOTO 1130

```



1. Bally On-Board ROM Sub-Routines. Explains the use of the on-board routines which allow you to perform such things as you find in the "Machine Language Programs" in Cursor. Includes ASCII Standard & Nonstandard Character Sets, Cassette Memory Structure; Output Ports; Input Ports; Bally Data Base Locations; Bally Memory Locations; and On-Board ROM 8K Hex Dump. \$4.49
2. Hackers Manual. Describes features provided in the Tiny Basic but not documented in the Bally Instruction Booklet. (Additional Commands). \$3.99
3. Disassembled Tiny Basic (CDOS Z80 Assembler Version 02.15) A complete assembly language listing including OP Code and comments of the Tiny Basic Cartridge. \$8.49
4. Disassembled Brickyard & Clowns. A complete assembly language listing including OP Code and comments. \$9.99
5. Disassembled DEMO Cassette. A complete assembly language listing including OP Code and comments. \$8.49
6. Bally System Description Book. Extensive and includes "Electrical Specifications for Midway Custom Circuits", Timing Interrupt handling explanations, etc. \$8.99
7. Disassembled System Software. A complete assembly language listing including OP Code and comments to include: Home Video Game Equates; Port Equates; System Call Indexes; Macros; Music Macros; Music Equates; System RAM Memory Cells; User Supplied Routines; Masks; UPI Routines Address Tables; Sentry; BCD Divide; BCD Subtract & Add; Decrement Counters & Timers; Music CPU; Vectoring Routines; Paint Rectangle Routines; Write Routines; Character Display Routines; Display BCD; Menu Routines and much, much more. \$13.49
8. Disassembled On-Board Games. A complete assembly language listing including OP Code and comments to include: Scribbling, Calculator, Checkmate, Gun Fight. \$15.99
9. Bally Service Manual. Schematics, Parts Lists, instructions for removing RF Shields, and much more. No one should be without it!! \$3.50
10. PEEK n' POKE: The only manual written that is truly beginner level. Opens up the power of machine language; tells how to get floating point decimal out of this machine along with programs. \$8.25

NOTE: ALL MANUALS INCLUDE FIRST CLASS POSTAGE

Here are the rules for Hamurabi. After you answer each question press 'GO'

1. At the start a person needs 10 bushels of grain per year to live. Farm worker strikes can change this. They may accept up to 2 less bushels than they demand. If your offer is rejected there will be no harvest. Strike amount equals 10 plus your settlement.
2. 55% of the people must be fed or your term of office may expire.
3. You may buy or sell land at prices from 17 to 26 bushels per acre.
4. It takes 3 bushels to plant an acre and 1 worker to plant 10 acres.
5. Term of office is twenty years. If you can make it.

NOTE: It would help to have a calculator close at hand if you want to win!

```

10 CLEAR
20 : RETURN ; P=50; G=2000; L=500; D=10; S=0; M
=0; K=0; X=0; PRINT "WHAT IS YOUR NAME?",  

",  

30 V=KP; TV=V; IF V=31 X=X-1; GOTO 30
40 IF V#13 X=X+1; @(X)=V; GOTO 30
50 FOR Y=1 TO 20; GOSUB 360; PRINT "I BEG  

TO REPORT TO YOU. ON YEAR", #3, Y
60 N=RND (5)+2; R=RND (4)÷4xG:N; IF R>0 G=G
-R; PRINT "RATS ATE", #1, R, "bushels"
70 N=RND (4)+1; T=RND (6)÷6xG:N; IF T>0 G=G
-T; PRINT "THIEVES STOLE", #1, T, "BUSH
ELS
80 IF RND (13)÷13=1 W=1
90 IF W=1 E=RND (6); PRINT "A STRIKE HAS B
EEN CALLED BY LOCAL 462 OF THE UNION
THEY DEMAND", #2, E, "MORE BUSHELS
100 IF W=1 INPUT "WHAT IS YOUR OFFER?", 0; IF
E-0<RND (3) D=D+0; PRINT "FEED YOUR PE
OPLE", #1, D, "BUSHELS PER YEAR"; W=0
110 N=RND (30); IF N<3 PRINT "A PLAGUE HAS
HIT THE CITY. HALF THE PEOPLE DIED"
; P=P÷2
120 I=P÷5+RND (30); P=P+I; PRINT "NEW PEOPE
", #4, I; PRINT "PEOPLE STARVED", #4, S; PR
INT "POPULATION OF THE CITY", #1, P
130 PRINT "ACRES OF LAND", #6, L; H=RND (6);
IF H=1 PRINT "A DROUGHT HAS HIT THE LA
ND
140 IF W=1 PRINT "THE UNION PICKETS AND TH
E GRAIN ROTS"; GOTO 160

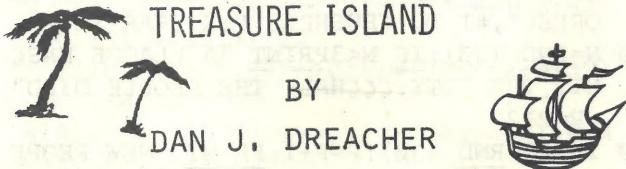
```



```

150 IF M#0PRINT #4,M,"ACRES PLANTED";PRINT #4,H,"BUSHELS PER ACRE";V=MxH;PRINT #4,V,"HARVEST FOR THIS YEAR";G=G+V
160 PRINT "BUSHELS OF GRAIN",#6,G;A=RND (10)+16
170 PRINT "BUY # ACRES @",#4,A;,INPUT "BUSHELS PER ACRE?"B;IF BxA>GGOSUB 350;GOTO 170
180 U=0;IF B=0 IF L#0INPUT "SELL # ACRES?"U;IF U>LGOSUB 340;GOTO 180
190 G=G-AxG+AxU;L=L+B-U
200 INPUT "BUSHELS TO FEED CITY?"C;IF C>G GOSUB 350;GOTO 200
210 G=G-C;F=C:D;IF F>P F=P
220 IF F>P:2+P:20GOTO 270
230 GOSUB 360;PRINT "YOU HAVE BEEN ACCUSED OF STARVING YOUR PEOPLE";PRINT "A JURY WILL DECIDE YOUR FATE"
240 IF RND (4)=1PRINT "THE JURY HAS FOUND YOU NOT GUILTY BY REASON OF INSANITY. BE MORE CAREFULL!!";GOTO 270
250 PRINT "YOU HAVE BEEN FOUND GUILTY AND ARE SENTENCED TO LIFE ON A LONELY ROCK IN THE SUMERIAN SEA."
260 GOTO 320
270 S=P-F;K=K+S;P=F;M=0
280 IF L#0INPUT "# ACRES TO PLANT?"M;IF M x3>GGOSUB 350;GOTO 280
290 IF M>Px10GOSUB 330;PRINT #1,P,"WORKERS";GOTO 280
300 IF M>LGOSUB 340;GOTO 280
310 G=G-Mx3;NEXT Y;GOSUB 360;PRINT "YOU COMPLETED YOUR TERM, BUT STARVED",#1,K,"People"
320 A=KP;GOTO 10
330 PRINT "SORRY YOU ONLY HAVE",;RETURN
340 GOSUB 330;PRINT #1,L,"ACRES";RETURN
350 GOSUB 330;PRINT #1,G,"BUSHELS";RETURN
360 PRINT "KING",;FOR N=1 TO X;TV=@(N);NEXT N;RETURN

```



This is a game for two players that uses the keypad for input. The computer hides a treasure behind a secret box in a matrix of sixty boxes. Behind the other boxes can be found clues, cute little symbols, or nothing at all. The object of the game is to find the treasure first.

On the screen will appear two pirate ships, one representing each player. As you can see, they are docked at Treasure Island. Player one decides which box to check behind. Always counting from left to right and top to bottom, you enter the number of boxes you want to move horizontally (H) and vertically (V). A member of your crew will hop out of your ship and quickly execute movement for those values and reach the desired box. Here he will dig for treasure and find one of the following things;

1. The Treasure---- (\$)
2. Clues----- Arrows that point in the direction of the treasure. It simply means that the treasure cannot be in the rows behind the arrow. It can be in the same row. The arrow will be covered up and should be remembered.
3. Quicksand----- (*) lose one turn
4. Pirates Latreen--(0) No effect on playing game
5. Pirate Attack--- The selecting players ship will be shot at by the other pirate ship. No effect on playing of game.
6. Blank----- Nothing there at all

This game includes interesting graphics and sound. It's also fun to play!

```

2 .565313565300500605434200
10 BC=221;FC=162;P=1;S=1;Z=10;R=0;CLEAR
20 BOX 60,30,10,2,1;BOX -60,30,10,2,1;BOX -65,31,4,1,1;BOX 65,31,4,1,1
30 BOX 60,29,8,2,1;BOX -60,29,8,2,1
40 BOX -67,32,2,2,1;BOX 67,32,2,2,1
50 BOX 59,34,1,8,1;BOX -59,34,1,8,1
55 LINE 55,30,4;LINE 51,32,1
56 LINE -55,30,4;LINE -51,32,1
57 BOX 59,34,6,3,1;BOX -59,34,6,3,1
60 CX=-40;CY=-39;PRINT "TREASURE ISLAND"
65 L=65;N=25
66 LINE L,N,4
70 FOR A=1 TO 12;LINE L+RND (6)-6,N,1;N=N-5;NEXT A
80 IF L=65L=-65;N=25;GOTO 66
82 L=65;N=28
83 LINE L,N,4
85 FOR A=1 TO 14;LINE L,N+RND (4)-4,1;L=L-10;NEXT A
87 IF N=28N=-28;L=65;GOTO 83
90 FOR A=-24569 TO -24545;NT=12;MU=%(A);NEXT A;NT=3

```

```

100 X=-55;Y=20;FOR A=1 TO 60
110 BOX X,Y,7,7,1;@(A)=RND (10)
130 X=X+10;IF X=65X=-55;Y=Y-10
140 NEXT A;F=RND (60);@(F)=30
160 FOR M=1 TO 50;NEXT M
162 IF Z=10GOTO 165
164 BOX X,Y,7,7,1;IF X<55BOX X+10,Y,7,
7,1
165 GOSUB 1000
170 A=(V-1)x12+H;K=F:12
180 CX=X;CY=Y
190 IF @ (A)=30PRINT "$";GOTO 3000
200 IF @ (A)=1IF V<KPRINT "+";GOTO 160
210 IF @ (A)=2IF V>KPRINT "↑";GOTO 160
220 IF @ (A)=3IF H>F-(12xK)PRINT "↔";GO
TO 160
230 IF @ (A)=4IF H<F-(12xK)PRINT "→";GO
TO 160
240 IF @ (A)=5PRINT "*";CY=-39;PRINT "Q
UICKSAND-LOSE ONE TURN";R=10;GOTO
165
250 IF @ (A)=6GOTO 600
260 IF @ (A)=7IF V<KPRINT "+";GOTO 160
270 IF @ (A)=8IF V>KPRINT "↑";GOTO 160
275 IF @ (A)=9PRINT "@";CY=-39;PRINT "ζ
PIRATES LOST LATRINE";GOTO 165
280 BOX X,Y,7,7,2;GOTO 165
600 H=32;CY=-39;CX=-40;PRINT "PIRATE A
TTACK
605 IF P=1E=-59
606 &(21)=230;IF P=2E=59
610 FOR A=1 TO 59
620 IF A<4H=H+1
630 IF A>58H=H-1
640 IF P=1E=E+2
645 &(19)=A+20
650 IF P=2E=E-2
660 BOX E,H,2,2,1;BOX E,H,2,2,2
665 NEXT A;&(21)=0
670 BOX E,H-RND (3),1+RND (6),1+RND (6
),2;MU="1";GOTO 160
1000 IF P=2GOTO 1006
1003 CX=-40;CY=35;INPUT H
1004 CX=-40;CY=35;INPUT V
1005 IF P=1GOTO 1014
1006 CX=20;CY=35;INPUT H
1007 CX=20;CY=35;INPUT V
1014 BOX 0,-39,160,10,2
1015 IF H>12H=12
1016 IF V>5V=5
1020 BOX 0,35,100,10,2;E=-60
1027 IF P=2E=60
1030 FOR M=1 TO 50;Z=0;BOX E,30,2,3,3;NEXT
M;Y=30
1060 X=-65;IF P=2X=65
1065 FOR M=1 TO V;BOX X,Y,2,3,3;MU="3";Y=Y
-10;BOX X,Y,2,3,3;NEXT M

```

```

1105 G=10;IF P=2G=-10
1110 IF P=1FOR M=1 TO H
1115 IF P=2FOR M=1 TO 13-H
1120 BOX X,Y,2,3,3;X=X+G;BOX X,Y,2,3,3
1140 MU="1"
1150 NEXT M
1160 FOR M=1 TO 50;BOX X,Y,2,3,3;NEXT M
1190 IF R=10R=0;RETURN
1195 IF P=1P=2;RETURN
1200 P=1;RETURN
3000 PRINT "ζζζYOU WIN

```



BACK ISSUES AVAILABLE

We have had numerous requests for info regarding BACK ISSUES! The following are available:

1. Jan. 80 Contains: Electric Bill Analysis; Plastic Puzzle; Instructions for adding a Full-sized ASCII Keyboard; Life Synthesis Model.
2. Feb. 80 Contains: PEEK n' POKE: Hex to Decimal Converter; String Array @ (A) Memory Locator; Instructions on how to add a Printer; Bubble Sort; Camel; Memory Map; WUMPUS.
3. Mar. 80 Contains: Three Voice Music Assembler; Star Wars Music; Chopsticks; Chicago Loop; Lace Curtain; Character Set Size Multiplier; Rotation; National Distributor Info.
4. Apr/May 80 Contains: DMA Graphics (eliminates BOX & LINE commands, allows very complex graphics!); Reference Books, Product Review (Computer Ear-Speech Recognition Unit for Bally); Music Contest; RING; Alarm Clock; Byte Saving Hints.
5. June 80 Contains: Direct Color Video/Audio Circuit (for Color Monitor or VCR etc.); Galactibattle (Game); PRINT & STRING Tutorial; OTHELLO: ASCII Conversion Chart; Cursor Control Chart.
6. July 80 Contains: CURSOR Keyboard & 48K Memory Add-On info; ARCADE GOLF; Shell-Metzner Sort; Wavemakers "Maze-maker"; Floating Point Math; User Group Meetings.
- VOL. 2, Issue 1 (August) Contains: Cursor Inventory Control (Business Software); "Connect Four" (a professional quality game); software for the Computer Ear (Anderson Research) - "Fun With Music".
- VOL. 2, Issue 2 (Sept.) Contains: ASTROVISION ACQUIRES BALLY - an Editorial; Spider Web (Graphics Program); Reverse (Game); Design (a Graphics Program); Match Quiz (an Education Program); Note Match (an Education Program).
- VOL. 2, Issue 3 (October) Contains: Peek n' Poke Tutorial; Critter - a Machine Language Program that creates a non-blinking FAST moving character; Poor Mans Memory Expansion (a tutorial); Sideswipe (car driving game); We Three Kings of Orient Are (3 Voice Chord Music); Machine Language Graphics Tutorial.
- VOL. 2, Issue 4 (Nov/Dec) Contains: "ZGRASS32" Add-under info; New game cartridges; Programming Contest; Complete Bally, Game Cartridge description; Chess program; Software reviews.
- Vol. 2, Issue 5 (Jan/Feb) Contains: Winter CES News; Bio-Rhythms Compatability Analysis program; Towers of Hanoi game; Executive Time Card Calculator program; How to display all 256 colors on screen at same time; 1's & 5's game program; Line Resequencing program.

SEND \$1.75 per back issue desired OR \$9.75 for Volumn I and \$9.75 for Volumn II to: CURSOR, P.O. Box 266, N. Hollywood, CA 91603



Still the BEST buy in town!! CURSOR C-20 Digital Blank Tape by the case. Although we have had to raise the price (our cost went up) you can't buy a better quality C-20 tape any any price. Just send us \$15.99 (check or money order for faster service) and we'll rush you 10 great tapes to help you program at your very best.

.....CONTINUED FROM PAGE 93.....

Same result. We are telling the computer to print "ZAP" IF any or all of the statements contained within parenthesis are correct. We can limit this statement even further-lets say we wanted to print "ZAP" if three out of the four statements were correct:

10 IF (A=6)+(B=7)+(C=9)+(D=2)=3 PRINT "ZAP"

We could have said 0,1,2,3, or 4. Zero would be saying IF none of these are true print "ZAP".

3. SPACING

Many bytes may be saved by eliminating unnecessary space in program lines. The rule is simple, there are 3 types of Text:

1. Command words (IF, PRINT, LIST,etc)
2. Letters (A,B,C etc)
3. Numbers (1,2,3 etc)

You many place any 2 different types together without a space.

ACCEPTABLE

10 IF A=26C=3

20 IF A=26 PRINT "HELLO

30 IF A=BGOTO 100

NOT ACCEPTABLE

10 A=BC=3

CLIP

P. O. BOX 266, NO. HOLLYWOOD, CA. 91603

FIRST CLASS

Arthur Bergantz
2917 Headland Dr.
St. Charles, MO 63301



WAVEMAKERS BOX 94801 SCHAUMBURG, ILL. 60193

TAPE 7

Guitar Course

GUITAR TUNING

3 2 1
0 0 0
0 0 0
4 5 6
TUNE 1 TO THIS NOTE

Would you like to become the next Peter Frampton, or the Beatles? Well so would I, I love money. Maybe you'd settle for playing guitar for your own enjoyment and leave the hit records to Pink Floyd. But why spend \$10.00 on a lesson for the next six months when for only \$12.95 + 50¢ postage you can learn from your computer and T.V. screen at your own pace.

EADGBE

CHORD C
MINOR A
USE KNOB 1
TO SELECT
CHORD, PUSH
UP FOR SHARP
PULL TRIGGER
654321



D.J. Dreacher
3328 Red Fox Run Dr., NW
Warren, OH 44485

If you like "Treasure Island", page 96, CURSOR recommends you send \$9.50 for Dan's two new programs -- 'Star Trek' and 'Mini-Golf'. Both games are excellent!! "Star Trek": You are sitting at the command console looking out the main view screen. A read-out at the bottom of the screen keeps you informed of your warp factor, direction, etc. Challenging! "Golf" has six holes and a capacity for one to four players.

FIRST CLASS
U. S. POSTAGE
PAID

BURBANK, CA.
PERMIT NO. 291